

REMARKS

In the Office Action, the Examiner objected to the specification. The Examiner also objected to claim 12 for informalities. The Examiner rejected claims 1, 3-8, 10-14, and 16-19 under 35 U.S.C. 102(b) as being anticipated by a publication entitled "LaGrange Multiplier Section in Hybrid Video Encoder Control", by Wiegand, et al. ("Wiegand"). The Examiner also rejected claims 2, 9, and 15 under 35 U.S.C 103(a) as being unpatentable over Wiegand in view of a publication entitled "Blocking Effect Removal Using Regularization and Dithering" by Yang et al. ("Yang").

In this Amendment, Applicants have amended claims 1-18. Applicants have not canceled nor added any claim. Accordingly, claims 1-19 will be pending in the application after entry of this Amendment.

I. Objection to the Specification

In the Office Action, the Examiner objected to the specification. Specifically the Examiner objected to the abstract of the disclosure, due to improper language. The Examiner requested that Applicants avoid using "implied phrases such as 'In this disclosure' and 'is disclosed.'" In this Amendment, Applicants have amended the specification to incorporate the proper language and format for an abstract of the disclosure.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the objection to the specification.

II. Objection to Claim 12

In the Office Action, the Examiner objected to claim 12 for informalities. Specifically, the Examiner requested that Applicants amend claim 12 to depend on claim 11 instead of claim 5. In this Amendment, Applicants have amended claim 12 to depend on claim 11.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the objection to claim 12.

III. Rejection of Claims 1 and 3-6 Under §102(b) and Claim 2 Under §103(a)

In the Office Action, the Examiner rejected claims 1 and 3-6 under §102(b) as being anticipated by Wiegand. The Examiner also rejected claim 2 under 103(a) as being unpatentable over Wiegand in view of Yang. Claims 2-6 are dependent directly or indirectly on claim 1. Claim 1 recites a method of performing mode selection in a video compression and encoding system. The method encodes with several encoding modes from a set of encoding modes. The method computes a distortion value for each encoding mode from the several encoding modes, where computing the distortion value includes using a function that reduces the effects of outliers. The method computes a bit rate value for each encoding mode from the several encoding modes. The method computes a Lagrangian value for each encoding mode from the several encoding modes, using the distortion value, the bit rate value, and a Lagrangian multiplier. The method selects an encoding mode based on the Lagrangian values.

Applicants respectfully submit that Wiegand or any of the cited references do not disclose, teach, or even suggest such a method. Wiegand describes a method for selecting a Lagrange multiplier for a mode in a hybrid video coder control. Specifically, Wiegand describes a method that considers a quantization value and a Lagrange multiplier for a motion estimation to

select a Lagrange multiplier for a mode. Wiegand describes several distortion values. For instance, one of Wiegand's distortion values is measured as the sum of squared differences between reconstructed and original macroblock pixels. *See Wiegand, page 542, column 2, lines 12-15.* However, none of Wiegand's distortion values comprise using a function that reduces the effects of outliers, as recited in claim 1.

Therefore, Wiegand does not disclose, teach, or even suggest a method that computes a distortion value for each encoding mode from the several encoding modes, where computing the distortion value includes using a function that reduces the effects of outliers, as recited in the claim 1.

Accordingly, Applicants respectfully submit that Wiegand does not render claim 1 unpatentable. As claims 2-6 are dependent directly or indirectly on claim 1, Applicants respectfully submit that claims 2-6 are patentable over Wiegand for at least the same reasons that were discussed above for claim 1.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102(b) rejection of claims 1, and 3-6, and the §103(a) rejection of claim 2.

IV. Rejection of Claims 7-8, 10-12 under §102(b) and Claim 9 Under §103(a)

In the Office Action, the Examiner rejected claims 7-8 and 10-12 under §102(b) as being anticipated by Wiegand. The Examiner also rejected claim 9 under 103(a) as being unpatentable over Wiegand in view of Yang. Claims 8-12 are dependent directly or indirectly on claim 7. Claim 7 recites a method of performing mode selection in a video compression and encoding system. The method encodes with several encoding modes from a set of encoding modes. The method computes a distortion value for each encoding mode from the several encoding modes.

The method computes a bit rate value for each encoding mode from the several encoding modes. The method computes a Lagrangian value for each encoding mode from the several encoding modes, using the distortion value, the bit rate value, and a Lagrangian multiplier, where the Lagrangian multiplier includes a slow varying Lagrangian multiplier as a function of a quantization value. The slow varying Lagrangian multiplier varies at a slower rate than a varying reference Lagrangian multiplier for a reference encoding mode. The method selects an encoding mode based on the Lagrangian values.

Applicants respectfully submit that Wiegand or any of the cited references do not disclose, teach, or even suggest such a method. As mentioned above, Wiegand describes a method for selecting a Lagrange multiplier for a mode in a hybrid video coder control. Specifically, Wiegand describes method that considers a quantization value and a Lagrange multiplier for a motion estimation to select a Lagrange multiplier for a mode. Wiegand describes using several Lagrange multipliers. *See Wiegand, page 543, column 1, lines 46-48.* However, Wiegand does not describe a slow varying Lagrangian multiplier as a function of a quantization value, where the slow varying Lagrangian multiplier varies at a slower rate than a varying reference Lagrangian multiplier for a reference encoding mode, as recited in claim 7.

Accordingly, Applicants respectfully submit that the Wiegand does not render claim 7 unpatentable. As claims 8-12 are dependent directly or indirectly on claim 7, Applicants respectfully submit that claims 8-12 are patentable over Wiegand for at least the same reasons that were discussed above for claim 7.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102(b) rejection of claims 7, and 8-12, and the §103(a) rejection of claim 9.

V. Rejection of Claims 13-14 and 16-19 and Claim 15 Under §103(a)

In the Office Action, the Examiner rejected claims 13-14 and 16-19 under §102(b) as being anticipated by Wiegand. The Examiner also rejected claim 15 under 103(a) as being unpatentable over Wiegand in view of Yang. Claims 14-19 are dependent on claim 13. Claim 13 recites a method of performing mode selection in a video compression and encoding system. The method encodes with several encoding modes from a set of encoding modes. The method computes a distortion value for each encoding mode from the several encoding modes. The method computes a bit rate value for each encoding mode from the several encoding modes. The method computes a Lagrangian value for each encoding mode from the several encoding modes, using the distortion value, the bit rate value, and a Lagrangian multiplier. The method clusters the Lagrangian values. The method selects an encoding mode based on the Lagrangian values by selecting a mode 0 encoding method if said mode 0 encoding method is in a specific cluster.

Applicants respectfully submit that Wiegand or any of the cited references do not disclose, teach, or even suggest such a method. As previously described, Wiegand describes a method for selecting a Lagrange multiplier for a mode in a hybrid video coder control. Specifically, Wiegand describes a method that considers a quantization value and a Lagrange multiplier for a motion estimation to select a Lagrange multiplier for a mode. Wiegand describes using several Lagrange multipliers. *See Wiegand, page 543, column 1, lines 46-48.* However, Wiegand does not describe a method that clusters the Lagrangian values, as recited in claim 13.

Accordingly, Applicants respectfully submit that Wiegand does not render claim 13 unpatentable. As claims 14-19 are dependent on claim 13, Applicants respectfully submit that

claims 14-19 are patentable over Wiegand for at least the same reasons that were discussed above for claim 13.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102(b) rejection of claims 13-14 and 16-12, and the §103(a) rejection of claim 15.

CONCLUSION

In view of the foregoing, it is submitted that all the pending claims, namely claims 1-19, are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

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